



MACQUARIE
UNIVERSITY

FACULTY OF SCIENCE



Safety Management System

Pelagica #24195

- 1 -

November 2013

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Changes

Version 1.0 – February 2011: Draft

Version 1.1 – April 2011

Version 1.2 – August 2011: Changes to staff, Marine Fieldwork Manager and Dive Officer

Version 1.3 November 2013: Changes to staff, Marine Fieldwork Manager and Dive Officer

About this document

This Safety Management System and the associated Standard Operating Procedures and Risk Assessments are prepared by the Faculty of Science at Macquarie University to meet the requirements of Part 10 of the *Marine Safety (Commercial Vessels) Regulation 2010*.

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1 – General Information

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The *Macquarie University Act 1989* sets out the charter of the University. Under this charter “the object of the University is the promotion, within the limits of the University’s resources, of scholarship, research, free inquiry, the interaction of research and teaching, and academic excellence”. One of the University’s principal functions it to provide “facilities for education and research of university standard”.

As part of these facilities, the Faculty of Science at Macquarie University operates a number of small vessels (i.e. <7.5m) for the purpose of scientific research, training and teaching. These vessels are used by staff, students and people associated with the University.

“Pelagica” is a 5.95m *AIRIB Rover 6.2*. It is powered by twin Yamaha FT60 4-stroke 60 horsepower outboard engines.

Pelagica is stored on a trailer at the North Ryde Campus of Macquarie University.

Pelagica operates in 2C commercial registration, #24195. Pelagica can carry a maximum of 6 persons (the Master + 5 special personnel, or a total of 933kg of people and cargo) when operating at planning speeds, and may carry a maximum load of 1400kg. When conducting Diving operations the Master + 4 special personnel. The Faculty of Science recommends that a minimum of two people (the Master + one other) be onboard the vessel at all times whilst underway. However, the vessel may be operated by a single person in situations that have been approved by the Marine Fieldwork Manager.

Pelagica is used by staff, students and other people approved by the Marine Fieldwork Manager. The vessel is used on smooth, partially smooth and open waters (to a maximum of 15 nm to seaward and 30nm along the coast from a safe haven) around Australia. All masters of the vessel, and vessel operations, must be approved by the Marine Fieldwork Manager, and all masters must have completed an approved induction.

The activities undertaken using the vessel may include, but are not limited to; scientific research as approved by Macquarie University, teaching for programs operated by the University and its associates (including outreach programs), and training of staff, students and other people as appropriate in activities associated with scientific research and teaching (including vessel handling). Typical uses of the vessel include, but are not limited to, transporting personnel and equipment to and from research sites, deploying and retrieving research equipment, sample collection and diving operations.

Pelagica operates under Division 1 of Part 13 of the Marine Safety (Commercial Vessels) Regulation 2010. The minimum qualification requirement to be the master of the vessel is a General Boat Licence or a Personal Watercraft Licence.

Vessel Details:

Name	Pelagica
Vessel Type	AIRIB Rover 6.2
Registration Number	24195 (NSW)
Registration Type	2C
Trailer Registration	V67153 (NSW)
Measured Length	5.95 m
Beam – overall	2.4 m
Beam – internal at deck	1.75
Deadrise	20°
Hull Alloy Thickness	4 mm
Collar tube diameter	440 mm
Engines	2 x Yamaha FT60DETX/09
Engine power	60 hp (44.13 kW) each
Propellers	13.5 x 15"
Fuel Capacity	150 L
Weight un-laden	630 kg
Maximum loading – planning	933 kg
Maximum loading – displacement	1400 kg

2 – Safety and Environment Protocols

Macquarie University Health and Safety Policy 2011: [Work Health and Safety Act \(NSW\) 2011](#), the [Work Health and Safety Regulation \(NSW\)](#)

Macquarie University is committed to ensuring the health and wellbeing of its employees, students and visitors by providing a safe workplace, eliminate or reduce hazards that could result in injury or ill health and implementing initiatives aimed at improving employee and student welfare.

Therefore, Macquarie University will:

- providing and maintaining a work environment without risks to health and safety
- providing and maintaining safe plant and structures, and safe systems of work
- ensuring the safe use, handling, and storage of plant, structures and substances
- providing adequate facilities for the welfare of workers in carrying out work for the University, including ensuring access to those facilities
- providing information, training, instruction or supervision that is necessary to protect all persons from risks to their health and safety arising from work carried out at the University
- monitoring the health of workers and the conditions at the workplace for the purpose of preventing illness or injury of workers
- increasing awareness of workplace safety
- eliminating risks to health and safety and reducing hazards that could result in injury or ill health
- responding to emergency events, and
- implementing initiatives aimed at improving staff and student welfare.

The Faculty of Science at Macquarie University aims to operate its vessels with the minimum risk to personnel, including both those associated with the university and members of the public. In addition the Faculty of Science aims to have the minimum practical impact on the environment by limiting unnecessary and avoidable pollution and degradation of the marine, terrestrial and atmospheric environments. During the operation of its vessels the Faculty of Science aims to meet all relevant regulations, standards, codes and guidelines.

The Faculty of Science will:

- Eliminate or manage risks by ensuring that all boating activities are assessed through the risk assessment process and that suitable risk controls are implemented. The Marine Fieldwork Manager must be satisfied that foreseeable hazards are identified and controlled.
- Provide suitable training and assessment of capability to ensure that all vessel masters are competent. This will be achieved by providing both theory and practical training in the procedures and protocols relating to use of the Faculty of Science vessels.
- Provide a safe working environment by ensuring that the vessel is well maintained and carries appropriate safety equipment. This will be monitored through regular maintenance inspections.
- Ensure that all personnel onboard the vessel are knowledgeable of the emergency procedures and handling of safety equipment onboard the vessel through suitable pre-trip briefings.
- Ensure that vessel masters maintain their knowledge of the operating and emergency procedures through regular reassessment of competency.
- Consult with vessel users to ensure that the procedures are appropriate, to identify areas of improvement and to monitor the performance of this Safety Management System.
- Communicate this document and associated procedures with all Faculty of Science vessel users through the Faculty of Science Boating and Diving Committee and through the vessel operators mailing list.
- Follow all relevant rules and regulations.

All vessel users are responsible for their own conduct and safety when operating a Faculty of Science vessel. Users are expected to abide by the relevant rules, regulations

and procedures at all times, and to take all necessary precautions to protect that safety of human life, property and the environment.

Faculty of Science Drug and Alcohol during Boat Use Protocol:

The operation of a vessel can become dangerous when under the influence of alcohol and other drugs. That danger extends beyond the master of the vessel to the other personnel onboard the vessel, other waterway users and the general public. Alcohol and drugs may impair a person's ability to safely carry out tasks onboard and to assist themselves and others in an emergency. There is also the likelihood of putting others at risk by creating an emergency situation.

Because of these risks the Faculty of Science requires that the following protocols be followed by all people onboard a Faculty vessel:

- No alcohol or illicit drugs are to be consumed onboard the vessel.
- Prior to boarding the vessel, no alcohol or illicit drugs are to be consumed for a reasonable time, such that at the time of boarding the vessel the person is not under the influence of alcohol or illicit drugs.
- A person under the influence of alcohol or illicit drugs is not to board the vessel.
- A person who is taking medication that may impair their ability to safely participate onboard the vessel should seek medical advice before boarding the vessel. If necessary, the person should exclude themselves from boating activities.

Macquarie University Smoke-Free Campus Policy (OHS 34, August 2010):

The University recognises that staff and students have a personal choice to smoke, however, the University also recognises that there is an equal right for staff and students who do not smoke to work and study in an environment that is not polluted by environmental tobacco smoke.

Environmental tobacco smoke poses a significant health risk with overwhelming evidence demonstrating that passive smoking (the inhalation of residual smoke) increases the risk of developing lung cancer, as well as acting as a trigger for other serious medical conditions.

Smoking is prohibited in all Macquarie University vehicles, including boats.

Smoking while on field trips, research activities etc (i.e. during boating activities, but when not onboard the vessel, e.g. at the boat ramp), while not encouraged, must not occur within five metres of a work, meal or living environment.

Environmental Protection Protocol:

The Faculty of Science aims to minimise the impact of boating operations on the environment. Unless specifically permitted to do otherwise (e.g. through an approved research permit) all boat users should follow the protocols given below. The Master of the vessel is responsible for any environmental damage caused by the vessel whilst it is under their control. The protocols given below follow the NSW Maritime Boating Handbook environment recommendations.

- Discharge of waste or rubbish
 - No rubbish or waste is to be discharged from a Faculty of Science vessel.
 - All rubbish is to be collected onboard and disposed of appropriately on land.
 - Any waste chemicals used in research should be collected and returned to the University to be appropriately disposed of.
 - Care should be taken with fuel and oil to prevent spills.

- Noise
 - The main thing to consider under noise control legislation is the concept of offensive noise, which is based upon how a “reasonable person” would react.
 - In deciding whether the noise from a motor vessel is offensive, the following factors are considered:
 - The character of the noise.
 - The quality of the noise.
 - The noise level.
 - The effect the noise has on activities.
 - The time of the noise event, e.g. early morning.
 - The waterside land use.
 - Noise also disturbs wildlife. Care should be taken to reduce noise in the vicinity of waterbirds and other animals.

- Bank Erosion and Wash
 - The wash from a boat can erode banks in sheltered waterways. The larger the wake, the greater the potential for bank erosion.

- The master of the vessel should be aware of the wash being produced by the boat at all times and when necessary should minimise it as much as possible.
- Follow all “No Wash” and speed limit signs to limit the damage caused by wash.

- Seagrass
 - Seagrass beds provide food and shelter to a wide variety of fish and invertebrates. They also help bind the sea floor and improve water quality.
 - When possible, do not drive your boat across shallow, weedy areas, as boat propellers may damage seagrass.
 - Do not anchor on seagrass beds.

- Invasive species
 - The movement of trailer boats and boating equipment between waterways has the potential to spread invasive species.
 - *Caulerpa taxifolia* is an invasive marine seaweed that has been found in several NSW estuaries, and can be transported as small fragments on boating equipment.
 - If possible avoid shallow weedy areas where *Caulerpa taxifolia* can be collected on equipment.
 - Obey any local vessel exclusion zones.
 - Inspect all equipment, particularly ropes and anchors, after use.
 - Wash all equipment, the boat, and flush engines after use, particularly if moving between waterways.

- Protected species
 - All native birds, mammals and reptiles are protected in NSW.
 - The master of the vessel should, where possible, minimise the disturbance to these animals.
 - Be aware of the rules relating to approach distances and speeds near marine mammals.
 - At times during the year special restrictions may be in operation to protect species such as the little penguin.
 - It is the master’s responsibility to be aware of any rules or restrictions.

Risk Assessment and Record Keeping:

Every foreseeable activity associated with the operation of Faculty of Science vessels should be subject to a risk assessment. Typically, the Marine Fieldwork Manager is responsible for preparing a risk assessment for the general operation of Faculty of Science vessels. Users of the vessel are then responsible for completing risk assessments of the specific activities that they undertake when on the vessel (see Section 5 of this SMS). Risk assessments for diving operations conducted in association with vessel operations should be coordinated with the Diving Manager.

Risk assessment forms are available from <http://www.marinescience.mq.edu.au>

It is not necessary to complete a new risk assessment every time an activity is performed. However, the risk assessment should be consulted to ensure that participants are familiar with the potential risks and controls. Further, if a hazard is identified or the activity is modified the risk assessment should be reviewed and updated if necessary. If a new activity is to be undertaken, it should be added to the risk assessment.

Any staff member or student can initiate or review a risk assessment. If a person identifies a risk that is not covered by a risk assessment they should complete a Hazard Report Form: <http://www.pers.mq.edu.au/HealthAndSafety.html>

Completed risk assessments must be approved by a supervisor or suitably nominated manager. Completed risk assessments are lodged with the Marine Fieldwork Manager.

The field work leader must ensure that copies of Risk assessments are made available to all persons involved in the relevant activities including call back persons. The input of these people is valued and should be given a suitable hearing with changes made to the risk assessment if necessary.

Risk assessments are kept for as long as they are in use, and then for 5 years after their last use. Macquarie University recommends that risk assessments are reviewed annually, when activities change, if any concerns are raised, or if there is an incident.

Relevant legislation:

Navigation Act 1901

Marine Pollution Act 1987

Protection of the Environment Operations Act 1997

Marine Safety Act 1998

NSW OHS Act 2000

Water Traffic Regulations 2000

OHS Regulation 2001

State Records Regulation 2010

National Standards for Commercial Vessels 2010

Marine Safety (Commercial Vessels) Regulation 2010

Marine Safety (Domestic Commercial Vessels) National Law Act 2012

3 – Company Responsibilities and Authorities

The Faculty of Science at Macquarie University incorporates Biological Sciences, Chemistry & Biomolecular Sciences, Chiropractic, Computing, Earth & Planetary Sciences, Electronic Engineering, Environment & Geography, Mathematics, Physics & Astronomy and Statistics. The Faculty conducts research and offers both undergraduate and postgraduate teaching.

Addresses and contact details can be found in Section 1 of this SMS.

The Executive Dean of the Faculty of Science delegates authority over the Faculty vessels to the Marine Fieldwork Manager. The Marine Fieldwork Manager is the Designated Person.

The Marine Fieldwork Manager is responsible for:

- coordinating and monitoring the maintenance of the vessels;
- the necessary preparation, auditing and record keeping of vessel documentation, Safety Management Systems and procedures;
- the induction, training and approval of vessel operators; and
- the approval of vessel operations.

Details of the induction program are provided in Section 6 of this SMS.

The vessel “Pelagica” does not have a permanent crew. Instead the vessel is crewed by Faculty of Science staff, students and affiliates as required, to conduct research, teaching and training. Pelagica operates under Section 9 of the Marine Safety (Domestic Commercial Vessels) National Law Act 2012. The minimum qualification requirement to be the master of the vessel is a General Boat Licence or a Personal Watercraft Licence. In addition, vessel operators must be approved by the Marine Fieldwork Manager to be a Master of Pelagica, or they must be under the supervision of an approved Master and undergoing approved training.

The Master of Pelagica must be a person who has been approved by the Marine Fieldwork Manager to be in control of the vessel at that time, has undergone an induction and training program, and has been deemed competent to lead the activities being undertaken onboard the vessel. The Master reports to the Marine Fieldwork Manager. The Master is responsible for the daily operation and

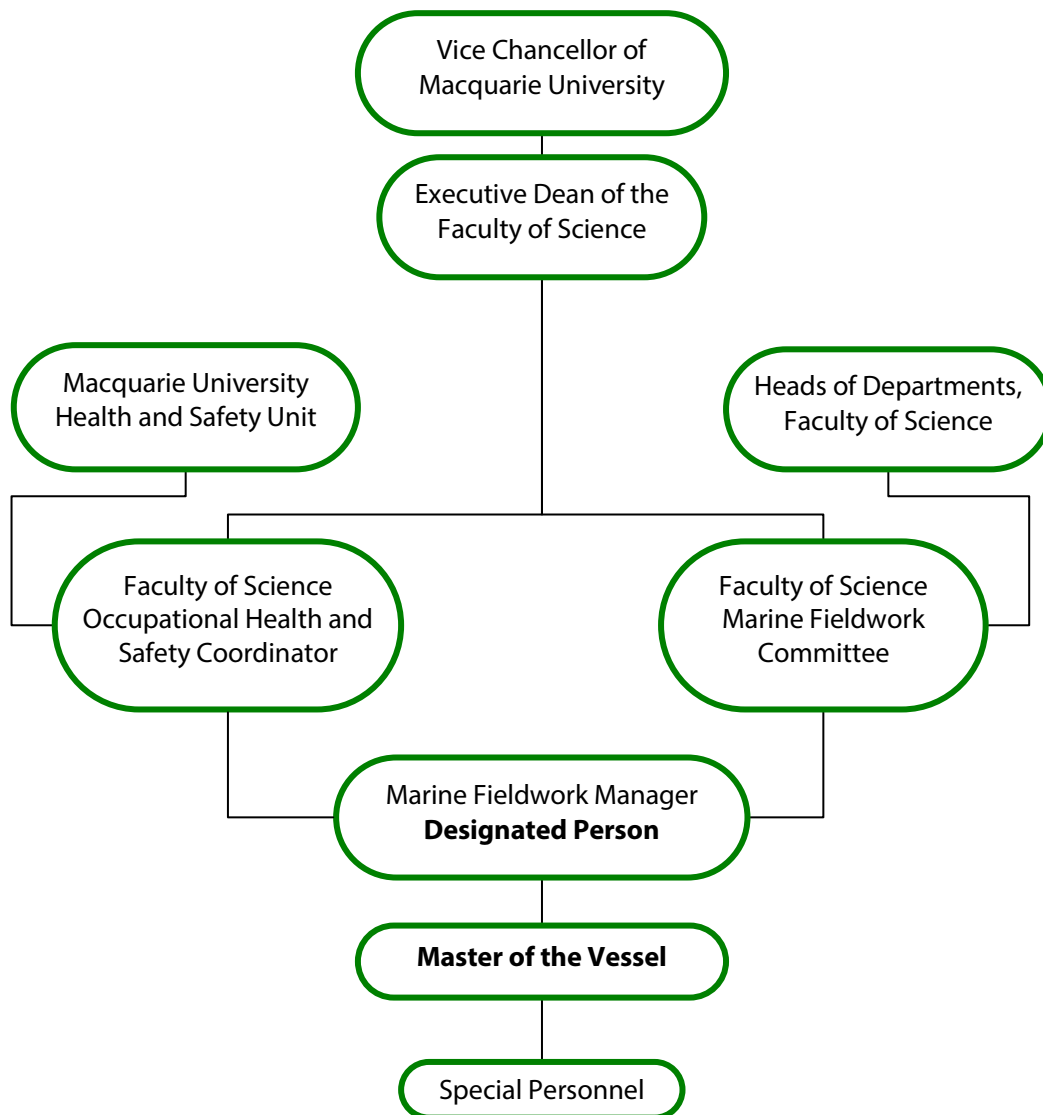
maintenance of the vessel during use, and the safety of themselves and others onboard the vessel.

The Faculty of Science recommends that a minimum of two people (the Master + one other) be onboard the vessel at all times whilst underway. However, the vessel may be operated by a single person in situations that have been approved by the Marine Fieldwork Manager. Those onboard other than the Master are Special Personnel. In addition to their other tasks onboard (e.g. research) these personnel are to act as deckhands as required by the Master. The Special Personnel are to be briefed prior to departure on the safety procedures, handling of safety equipment, and any specific tasks they may be required to perform. The Special Personnel must follow all reasonable directions of the Master in relation to the operation and safety of the vessel and those onboard.

Special Personnel are defined in the Marine Safety (Domestic Commercial Vessels) National Law Act 2012 as all persons who:

- a) Have knowledge of safety procedures and handling of safety equipment on board the vessel, and
- b) Are not members of the crew, and
- c) Are carried on board in connection with the special purpose of the vessel, or because of special work being carried out aboard the vessel, and
- d) Are able bodied.

Macquarie University Faculty of Science Vessel Operations Organisational Flowchart:



4 – Designated Person

The Marine Fieldwork Manager is the Designated Person for the Faculty of Science.

The Marine Fieldwork Manager reports to the Faculty of Science Occupational Health and Safety Coordinator for all matters regarding the safe operations of the Faculty vessels. The Marine Fieldwork Manager liaises with the Faculty of Science Boating and Diving Committee, the Heads of Departments, and the Executive Dean of the Faculty of Science for other matters.

Vessel users liaise with the Marine Fieldwork Manager for all matters relating to the use of the vessel and induction of users.

A full list of contact details are given in “Section 1: General Information”.

The Responsibilities of the Marine Fieldwork Manager:

- The induction training and approval of vessel masters
- The approval of vessel operations
- The regular maintenance of the vessel and the coordination of professional servicing (see Section 10 of this SMS)
- The regular maintenance of the safety equipment and other essential equipment associated with the vessel
- The review of risk assessments for the vessel and vessel operations
- The maintenance of this SMS and its associated documents
- The maintenance of vessel records for the Faculty of Science
- Coordinating the internal audits of this SMS and its associated documents (see Sections 11 & 12 of this SMS)
- Liaising with NSW Maritime for external audits of this SMS and any other vessel related matters

5 – The Master’s Responsibilities and Authority

The Master has full responsibility for the vessel and the people onboard during vessel operations. The Master has the authority to give reasonable directions to those onboard and is responsible for their own safety, those onboard and other people who may be affected by their behaviour or that of the vessel. The Master is responsible for the protection of the environment and the vessel during vessel operations.

The Master should notify the Marine Fieldwork Manager as soon as practical of any matters relating to the safe operation of the vessel.

The Master may deviate from the stated or normal procedures outlined by the Faculty if there is a risk to human life, the vessel or the environment, provided that the deviation does not increase the risk.

Similarly, the Marine Safety (Domestic Commercial Vessels) National Law Act 2012, states that: The Master, Special Personnel, and other persons are exempt from complying with the Regulation in relation to:

- a) action taken for the purpose of securing the safety of any person or avoiding significant risk to the environment, or
- b) action taken in compliance with a direction given by a relevant officer.

Note: A relevant officer is:

- a) a police officer, or
- b) an officer of a Department of the New South Wales Government or the Commonwealth Government, or
- c) an officer of a statutory authority created under the law of New South Wales or the Commonwealth.

The Master of the vessel is responsible for:

- Holding a valid General Boat Licence, Personal Watercraft Licence or a higher qualification.
- Ensuring that they have been fully inducted, trained and approved by the Marine Fieldwork Manager.
- Ensuring that they are competent to perform the required tasks and that they are not under the influence of any alcohol or drugs, including medications that may impair their ability to operate the vessel.
- Being familiar with this SMS and its associated documents including the operational and emergency procedures of the vessel.
- Ensuring that the vessel operations have been approved by the Marine Fieldwork Manager in advance of the proposed work.
- The decision to commence vessel operations based on the weather, the condition of the vessel, the abilities of those onboard and the tasks to be performed.
- The decision to cease vessel operations if conditions become unsafe or are likely to become unsafe.
- Considering the views of those onboard when assessing the safety of operations including the decision to cease or cancel operations.
- Ensuring that all appropriate safety equipment is onboard and operational before setting off.
- The safety of themselves and the others onboard the vessel.
- Performing a pre-trip briefing for all special personnel onboard.
- Issuing clear and concise instructions to those onboard when necessary.
- Allocating tasks to those onboard and ensuring that they have sufficient instruction or experience to perform those tasks.
- Controlling and coordinating emergency responses and delegating tasks.
- Complying with all relevant rules and directions in relation to the operation of the vessel, including but not limited to:
 - The International Regulations for Preventing Collisions at Sea (COLREGS)
 - Marine Safety Act 1998
 - Water Traffic Regulations 2000

- Marine Safety (Domestic Commercial Vessels) National Law Act 2012
- The directions of a Relevant Officer
- The maintenance of the vessel whilst it is in their use.
- Performing daily maintenance checks prior to departure.
- Reporting any maintenance issues to the Marine Fieldwork Manager as soon as practical.
- The correct reporting of any incidents, including to both Macquarie University and NSW Maritime.
- Reviewing the operational and emergency procedures of the vessel and reporting any necessary changes to the Marine Fieldwork Manager.
- Assisting the Marine Fieldwork Manager with the internal audit of this SMS and its associated documents.

Note: All Masters of the vessel must understand and agree to these responsibilities before operating Pelagica.

A Master has the responsibility to refuse to operate the vessel if they at anytime feel that they are not fit or competent to do so, or that the vessel or conditions are not fit for operations.

6 – Resources and Personnel

The Faculty of Science has a framework of personnel and procedures in place to ensure that its vessels are operated safely and that Masters of its vessels receive appropriate induction, training and assessment prior to operating vessels, and ongoing training and assessment to ensure that skills are maintained and improved.

The Faculty of Science will ensure that:

- Masters of Pelagica are suitably qualified with a General Boat Licence, Personal Watercraft Licence or higher relevant qualification.
- Masters of Pelagica have received an induction and training, and have been deemed competent in:
 - handling and manoeuvring Pelagica
 - launching and retrieving of Pelagica from and onto its trailer
 - actions to take in an emergency and to maintain safety onboard
 - the use and maintenance of the safety equipment carried onboard Pelagica
 - rope work and seamanship relevant to a small vessel
 - basic outboard engine operation
 - operation of the navigational instruments carried onboard Pelagica
 - voyage preparation, planning and navigation, including weather assessment
 - knowledge of the Safety Management System and risk assessment processes
- Masters of Pelagica are aware of their responsibilities for the safe operation of the vessel and protection of the environment.
- Essential emergency and operational instructions are provided and are available onboard the vessel (see Sections 7 & 8 of this SMS).
- All onboard are made aware of the emergency procedures and equipment through a pre-trip briefing conducted by the Master.
- The vessel is provided to users in a safe condition and that all necessary safety equipment is available.

- Masters of Pelagica maintain their competency through periodic assessment and if necessary training sessions.
- Training and operator records are maintained by the Marine Fieldwork Manager whilst they are in use and for a minimum of 5 years after use.

The Faculty of Science requires that a sufficient number of qualified first aid providers are present during boating operations to administer first aid to any foreseeable circumstance. It is desirable that all persons participating in vessel operations have first aid qualifications, however in some circumstances it may be possible to make adequate provisions for the delivery of first aid with fewer than all the personnel trained, provided that no fewer than two people are trained and able to provide first aid if required. If the Marine Fieldwork Manager approves operation of the vessel by a single person they should have first aid training and have a means of communication to request assistance if necessary. The Faculty of Science recommends that all Masters of its vessels receive training in first aid.

For vessel operations involving diving, the vessel users should refer to the Standard Operating Procedures for Diving and meet the requirements for training and personnel numbers (including sufficient crew to administer oxygen) outlined in those documents.

If a person is not deemed competent by the Marine Fieldwork Manager following induction and training they will not be authorised to be a Master of a Faculty of Science vessel.

Following induction and training if a person feels that they do not possess sufficient skills to operate the vessel they should not act as the Master. There is no obligation to be the Master of a vessel.

All persons onboard have a responsibility to raise any issues of safety with the Master during operations and if necessary with the Marine Fieldwork Manager after operations. Issues of safety may include the weather or sea conditions, the suitability of the vessel, the activities being performed or the behaviour of the Master or any other person onboard the vessel. If necessary a Hazard or Incident should be reported (see Section 9 of this SMS).

Process to become an authorised Master of a Macquarie University Faculty of Science vessel

Initial induction to operate a Faculty of Science vessel

To become an authorised Master, new users must:

1. Contact the Marine Fieldwork Manager, provide them with details and discuss the training process.
2. Undergo a shore based induction and training involving familiarisation with:
 - The Safety Management System;
 - Standard Operating Procedures;
 - Safety equipment;
 - Vessel maintenance; and,
 - The administrative processes, e.g. Fieldwork notification, vessel booking and risk assessments.
3. Complete an on-the-water induction with the Marine Fieldwork Manager or their delegate in the vessel they wish to be authorised to operate, receiving training on the items in the induction checklist and practicing tasks as outlined in the Standard Operating Procedures.
4. Operate the vessel under the supervision of the Marine Fieldwork Manager or their delegate until deemed competent by the Marine Fieldwork Manager to independently operate the vessel as a Master. User must also satisfactorily complete all items on the vessel induction checklist.

Induction to additional Faculty of Science vessels

Masters may only operate vessels in which they have been authorised. To be authorised in another Faculty of Science vessel, users must:

Complete an induction with the Marine Fieldwork Manager or their delegate. The induction may be either land-based or land and on-the-water at the discretion of the Marine Fieldwork Manager. The induction should familiarise the user with the vessel and highlight any differences between the Faculty of Science vessels.

Inductions for users who do not hold a current boat licence

The Faculty of Science encourages people who wish to operate vessels to obtain a licence and experience prior to requesting induction. However, from time to time it is not possible for people to gain suitable experience to obtain a licence outside of the university. In these situations users may, at the discretion of the Marine Fieldwork Manager, gain experience on a Faculty of Science vessel while it is being operated for another purpose. This type of training is available to people who intend to operate vessel for university purposes

Users operating a Faculty of Science vessel for the purpose of gaining the experience required to obtain a boat licence:

1. Must only operate the vessel under the supervision of a person approved by the Marine Fieldwork Manager who is onboard at all times and is able to take immediate control of the vessel;
2. Must operate the vessel at less than 10 knots;
3. Must not operate the vessel alone; and
4. Must be pre-approved by the Marine Fieldwork Manager to undertake the training.

Maintenance of competency

All users once inducted are expected to maintain their competency in operating vessels and their knowledge of university boating procedures. Users will be required to demonstrate this competency either through a verbal or an on-the-water assessment, at the discretion of the Marine Fieldwork Manager based on the amount of time spent operating vessels in the previous year.

7 – Operational Procedures

The operational procedures for Pelagica are outlined in the Pelagica Standard Operating Procedures. The Standard Operating Procedures are available to all Faculty of Science vessel users. All Masters of Pelagica are expected to be familiar with the Standard Operating Procedures. All vessel users are encouraged to provide feedback on the Standard Operating Procedures, particularly in areas of improvement or the addition of new procedures.

In addition to the Standard Operating Procedures, an Operating Procedures Quick Reference Guide is kept onboard the vessel.

The master-copy of the Pelagica Standard Operating Procedures and the Operating Procedures Quick Reference Guide is kept by the Marine Fieldwork Manager. The Marine Fieldwork Manager is responsible for these documents. They are to be kept for as long as they are in use and then for 5 years after their last use.

The Pelagica Standard Operating Procedures and the Operating Procedures Quick Guide are reviewed annually, when operations change, if there are any issues of concern or if there is an incident.

8 – Emergency Procedures

The Faculty of Science at Macquarie University aims to provide a safe work place for staff, students, and associates. However, if an accident occurs it is necessary to be prepared and to respond appropriately. In the event of an accident onboard Pelagica the Master is responsible for coordinating the response and the actions of those onboard. The Master may delegate tasks and responsibilities as appropriate in the situation.

If the Master is incapacitated and unable to control the vessel another person onboard must take control. If there is another approved Faculty of Science Master onboard they should take control of the vessel. If there is no other approved vessel Master, those onboard should follow the “Master Incapacitated” procedures as outlined in the Emergency Procedures Quick Reference Guide and as explained in the Pre-Trip Briefing.

If those onboard Pelagica witness an emergency they should attempt to contact emergency services and request assistance. If possible, they should provide assistance, but only if they have relevant training and if providing assistance does not put themselves, the vessel or other people at increased risk.

If those onboard Pelagica hear a distress broadcast over the radio from another vessel which is, beyond any possible doubt, in the vicinity of the vessel, they should immediately acknowledge receipt. However, in areas where reliable communications with a limited coast station (e.g. a Marine Rescue Station) is practicable, they should defer this acknowledgment for a short interval to allow the limited coast station to acknowledge receipt. If there is no acknowledgement by a coast station the details of the call should be recorded and an attempt made to re-broadcast the call to a coast station. If it is practical the Master may decide to provide assistance to the other vessel, but only if providing assistance does not put themselves, the vessel or other people at risk. The Master is under no obligation to provide assistance to the vessel beyond relaying the distress broadcast.

The procedures to be followed in an emergency are outlined in the Pelagica Standard Operating Procedures. In addition to the Pelagica Standard Operating Procedures, an Emergency Procedures Quick Reference Guide is kept onboard the vessel.

All Masters are expected to be familiar with the procedures before operating Pelagica, and must ensure that all personnel onboard the vessel are familiar with

the emergency procedures and the location of the Emergency Procedures Quick Reference Guide as part of their Pre-Trip Briefing.

The Master is allowed to deviate from the emergency procedures if the situation prohibits following the procedures. Any actions by the master must not increase the risk to the vessel or to the people onboard or near to the vessel.

During training vessel operators will be drilled in the emergency procedures. The vessel operator must be assessed to be competent and this level of competency agreed upon by both the Marine Fieldwork Manager and the vessel operator. The emergency response skills of the Masters of Pelagica will be assessed by the Marine Fieldwork Manager annually.

Masters are to run drills at least every two months whilst they are operating the vessel. The aim of these drills is to refresh the skills of the Master, train others onboard and to identify any areas that need improvement. If the vessel is not used for more than two months the drills are to be run at the next use. Masters are to record the running of drills in the vessel usage log. Drills to be performed include: Anchor deployment, person over board, radio operations, fire and prepare to abandon ship.

Any vessel user who identifies an area of the emergency procedures that requires attention has a responsibility to notify the Marine Fieldwork Manager.

The master-copy of the Pelagica Standard Operating Procedures and the Emergency Procedures Quick Reference Guide is kept by the Marine Fieldwork Manager. The Marine Fieldwork Manager is responsible for these documents. They are to be kept for as long as they are in use and then for 5 years after their last use.

The Pelagica Standard Operating Procedures and the Emergency Procedures Quick Guide are reviewed annually, when operations change, if there are any issues of concern or if there is an incident.

9 – Reporting Incident and Accidents

Macquarie University has implemented procedures for the reporting, analysis and response to hazards and accidents relating to university activities, including all operations associated with University vessels.

Reporting Hazards to Macquarie University:

A hazard is anything that has potential to harm life, health, property or the environment. Macquarie University aims to identify workplace hazards before they become “active hazards” or “incidents”.

It is the responsibility of all people involved in the operation of Faculty of Science vessels to report hazards that they identify and have not been adequately controlled.

To report a hazard, vessel users should complete a “*Hazard Report Form*” available from the main Macquarie University Health and Safety Unit webpage: <http://www.pers.mq.edu.au/HealthAndSafety.html>

The person reporting the hazard should then forward one copy of the Hazard Report Form to the Health and Safety Unit (ohs@mq.edu.au) and one copy to the Marine Fieldwork Manager.

Hazards should be reported as soon as practical upon returning from the voyage. If a hazard is identified prior to vessel operations users should consult with the Marine Fieldwork Manager to assess if action is required before the vessel can be used.

If vessel users require further information or assistance reporting hazards they should contact the Marine Fieldwork Manager.

Reporting Incidents to Macquarie University:

An incident is a hazard that has become active and resulted in harm to life, health, property or the environment. Any incident involving a Faculty of Science vessel must be reported.

A person involved in an incident, or a person aware of the details of the incident, must report it to the Macquarie University Health and Safety Unit as soon as practical after the incident has occurred.

To report an incident, vessel users should complete the “*Incident and Accident Report*” located at: <http://www.pers.mq.edu.au/HealthAndSafety.html>

In addition the reporting person should print a copy of the report and forward it to the Marine Fieldwork Manager.

Any incident involving a Faculty of Science vessel should be immediately reported to the Marine Fieldwork Manager by telephone or in person so that they can take any immediate action that is necessary and assist in coordinating the response.

Reporting Incidents to NSW Maritime:

If a marine accident occurs involving a Faculty of Science vessel, the Master of the vessel must prepare a “*Vessel Incident Report*” for NSW Maritime. The Master must coordinate the preparation of this report with the Marine Fieldwork Manager and must not submit the report without their knowledge.

The NSW Maritime Vessel Incident Report is available from:

http://www.maritime.nsw.gov.au/docs/forms/vessel_incident_report.pdf

or through the NSW Maritime webpage:

<http://www.maritime.nsw.gov.au>

A marine accident is:

- a) the loss of life of, or injury to, any person on board the vessel,
- b) the loss of a person from the vessel,
- c) the loss of life or injury to a person that is caused by the vessel,

- d) the loss, or presumed loss, of the vessel (including the sinking or abandonment of the vessel),
- e) the capsizing, grounding or flooding of the vessel,
- f) the collision of the vessel with another vessel or with any object,
- g) the vessel being disabled at sea (in any case in which it requires assistance),
- h) any fire on board the vessel,
- i) any damage being caused to the vessel (including any structural failure),
- j) any damage to the environment caused by the vessel or by any substance on, or discharged from, the vessel,
- k) any incident that causes danger of any of the above

Response by Macquarie University to reported hazards or incidents:

Any hazard or incident reported to the Macquarie University Health and Safety Unit will be investigated. The Health and Safety Unit will coordinate the investigation with the Marine Fieldwork Manager and will liaise with any other bodies, including NSW Maritime and Work Cover.

Following the reporting of a hazard or incident the Marine Fieldwork Manager will initiate a review of the Safety Management System, Standard Operating Procedures and Risk Assessments to ensure that risks are appropriately controlled.

If new procedures are implemented as part of the review the Marine Fieldwork Manager will communicate these to the vessel users and if necessary will coordinate further training for vessel users prior to allowing any further operation of the vessel.

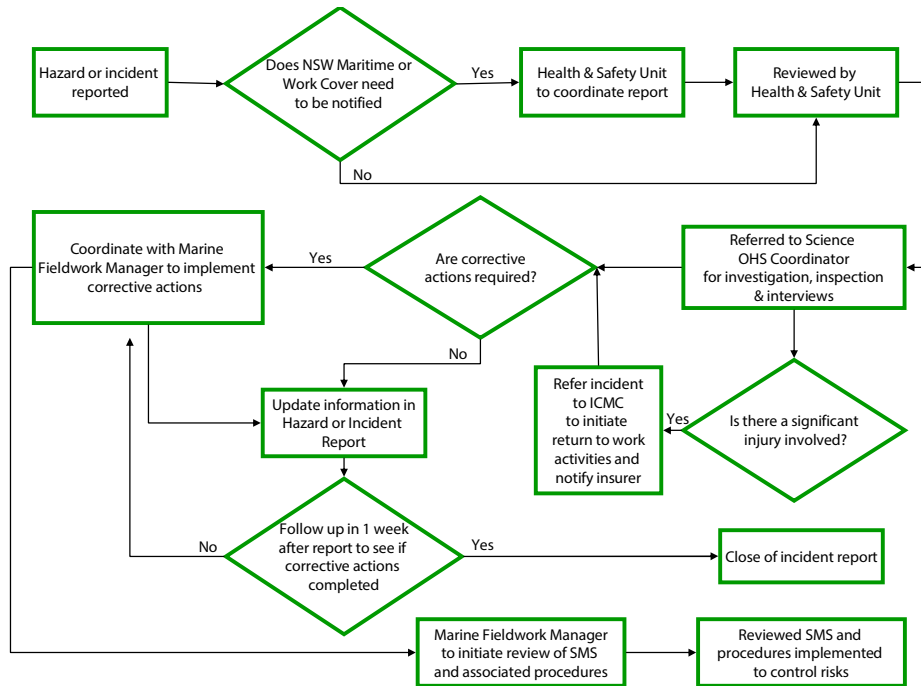
The reviewed Safety Management System, Standard Operating Procedures and Risk Assessments will be lodged with the Marine Fieldwork Manager.

Any superseded Safety Management System, Standard Operating Procedures and Risk Assessments are to be kept for 5 years after their last use.

The Safety Management System, Standard Operating Procedures and Risk Assessments that are in use will be reviewed annually, when operations change, if there are any issues of concern or if there is an incident.

New documentation and any changes are to be noted in the Changes section of the SMS.

Macquarie University Response to Vessel Hazard or Incident Flowchart:



10 – Maintenance and Recording

The Master of the vessel is responsible for checking that the vessel and all safety equipment are present and fully operational prior to commencing the voyage and at the end of the voyage.

If the vessel is not fully operational or safety equipment is not present or functional the Master should not commence the voyage, and must complete a vessel maintenance request.

If an item of equipment is damaged during a voyage or safety equipment is used the Master must inform the Marine Fieldwork Manager as soon as practicable and complete a vessel maintenance request.

The Marine Fieldwork Manager is responsible for the regular inspection and maintenance of the vessel as outlined in the Schedule of Maintenance Items. If an item is identified as needing maintenance the Marine Fieldwork Manager will coordinate the repairs. The Marine Fieldwork Manager or designated authority will perform maintenance inspections on the vessel at a minimum frequency of between every 20 and 30 engine hours. Following approximately every 100 hours of engine use time, or at a frequency recommended by the manufacturer, the Marine Fieldwork Manager will coordinate a professional inspection and service of the engine, boat and trailer.

Records of vessel deficiencies and actions to rectify will be kept for five years by the Marine Fieldwork Manager.

Regular maintenance inspection reports, records of vessel deficiencies and their corrections are kept in the vessel maintenance log maintained by the Marine Fieldwork Manager.

11 – Documentation

The Faculty of Science will use the following procedures to ensure that this SMS is kept up to date and that all relevant people are notified of any changes to the document.

The master copy of this SMS and all associated documents will be kept by the Manager, OHS unit, Macquarie University.

The master copy of this SMS and all associated documents are managed by the Marine Fieldwork Manager. Copies other than the master copies are considered uncontrolled.

If any changes are to be made to the document the Marine Fieldwork Manager will ensure that they are made and recorded in the “Changes” section at the front of this document.

Any out of date sections of this SMS must be removed and replaced with current information. Changes must be properly recorded and a copy of the out dated SMS must be kept in the records for 5 years.

A copy of the SMS is available to be inspected by any person associated with the operation of Faculty of Science vessels.

If any changes are made to the SMS the Marine Fieldwork Manager will notify all relevant people and provide them with access to the updated SMS. Staff and students will be notified using the Faculty of Science vessel operator mailing list and the Faculty mailing lists.

12 – Review and Evaluation

The Faculty of Science will conduct an internal audit / review of this SMS annually. This audit will check that the information contained in this SMS is up to date and that any changes to the organisation, the vessel or associated documents are recorded.

The audit will be managed by the Marine Fieldwork Manager and will be conducted in conjunction with the Faculty of Science Boating and Diving Committee, the Faculty of Science Occupational Health and Safety Coordinator and vessel Masters.

The results of the audit and any changes made to the SMS will be communicated to all relevant people and they will be provided with access to the updated SMS. Staff and students will be notified using the Faculty of Science vessel operator mailing list and the Faculty mailing lists.

The results of the audit and any changes made during the audit are recorded in the “Changes” section at the front of this document.

Changes must be properly recorded and a copy of the out dated SMS must be kept in the records for 5 years.

The SMS will be provided to NSW Maritime for external audit at their request.